

REMARKS

Reconsideration of this patent application is respectfully requested in view of the foregoing amendments, and the following remarks. Claims 1, 3, and 5-38 are in the application. Claim 1 has been amended. Claims 5, 6, and 14-38 have been withdrawn from consideration. Claims 2 and 4 have been canceled. Claims 1, 3 and 7-13 are now being considered.

The Examiner requested that applicant affirm the election of claims 1-4 and 7-13. Applicant hereby affirms such election, and has withdrawn claims 5, 6, and 14-38 from further consideration.

The Examiner rejected claims 1-4 and 7-13 under 35 USC 112, stating that claim 1 was unclear in the term "into a receiving mold open on one side of a tool bottom part". Applicant has amended claim 1 to clarify that the mold, not the tool bottom part, is open on one side.

The Examiner stated that the boundaries of the intermediate space were unclear. Applicant has amended claim 1 to state that the intermediate space is sealed off by the tool part, not from the tool part. There is no layer attached to the top part that seals the top part from the intermediate space. The top part

serves to seal the intermediate space to prevent the foam from traveling outside the space. The foam is placed directly in the space between the top part and the mold skin, without any intermediate layers being placed between the top part and the foam.

The Examiner stated that the term "reactive foaming agents" is unclear. Applicant submits that the foaming agent is not necessarily formed from two compounds that react together, but can from a single substance that reacts with air or oxygen to cause the foaming as well. These compounds are well known in the art and do not need to be explained in detail.

The Examiner rejected claims 1, 2, 10 and 12 under 35 USC 102(a) and (e) as being anticipated by or obvious in view of Malfliet et al. Claims 7, 8, and 13 were rejected as being unpatentable over Malfliet et al. Claim 3 is rejected over Malfliet in view of Jourquin et al. and claims 4, 9 and 11 are rejected over Malfliet et al. in view of Staneluis et al. Applicant respectfully traverses.

Applicant has further amended claim 1 to include the elements of claim 4, now canceled. Claim 1 has also been amended to clarify that the step of back-foaming takes place after the

step of hardening. The amendments to claim 1 described above with respect to the rejection under 35 USC 112 also clarify that there is no extra support layer used in the intermediate space between the top part and the mold skin.

The present invention relates to a molded body that is formed in the intermediate space between the upper tool part and the mold skin by the reactive foaming agents. Claim 1 does not require a separate carrier or support between the foaming agent and the upper tool part.

In Malfliet et al, during removal of the "molded article," it is necessary for individual mold sections 2-4 to be removed from one another first (see also p. 6, lines 2-6). The method according to the present invention, however, does not need this production step that is disclosed in Malfliet et al. as being essential to the invention and necessary.

Another significant difference results from the step according to claim 1 that describes the hardening of the plastic layer, whereby the mold skin forms. It is true that in Malfliet et al., different possibilities for casting the mold skin are mentioned: "Different techniques exist for molding the polyurethane skin 9", but neither in one of the possibilities for

casting and molding nor in any other prior art is it mentioned that the plastic layer is hardened first, before additional processing steps follow.

Furthermore, Malfliet et al. discloses that the production of the "articles" can be carried out either without an upper mold half (claims 1 to 4) or with an open upper mold half (claim 5 ff.). Furthermore, in the cases in which work is carried out with an upper tool, a separate carrier having a firm structure is always attached to the upper tool mold, which carrier is connected with the polyurethane skin (9) by way of a foam bridge (claim 10 ff., as well as p. 9, l. 27: "rigid structural backing layer").

In the specification of Malfliet et al., here p. 9, lines 24 ff., it is furthermore explained that after production of the polyurethane skin (9), the skin is removed from the mold, in order to be able to connect this polyurethane skin with carrier structures on the back ("rigid structural backing layer").

This step of connecting can also be carried out in the mold (the same mold) in which the polyurethane skin was also produced (p. 10, lines 7 ff.), but that this can only be done always using a structurally hard carrier (rigid carrier 10), which can be

attached to an upper mold, if necessary (p. 10, line 11 - p. 11, line 2).

Malfliet et al. further teaches that a reactive foam mixture is placed into the lower mold before the mold halves are closed, if applicable (see Figures 3 and 4 as well as p. 10, lines 11-14, "... is poured onto the back of the skin 9 **before closing** the mold"). In other words, while the tool is open, a component that is capable of foaming is first placed into the lower mold part (see also Figure 3), and afterwards, the tool is closed by pressing in the upper part provided with the carrier, if applicable. In this way, the material that forms foam is squeezed into the intermediate space that forms between the "skin (9)" and the carrier attached to the upper tool part, i.e., the rigid structural backing layer (10) in the sense of "support".

In order to leave this known path, to arrive at the solution according to the invention, a person skilled in the art had to completely take apart the method known from Malfliet et al., and combine it with new steps. In order to do so, the person skilled in the art first had to do without a rigid structural backing layer / support, and change the method in such a manner that only *after the mold is closed* (without any additional structural carrier), a plastic foam is placed into the mold, which foam

fills the intermediate space between upper tool part and the polyurethane skin situated in the lower tool part. The method is furthermore configured in such a manner that the molded body or carrier of the polyurethane skin is formed by the foam itself, and only comes about during the production process.

The method according to the application, according to the main claim, therefore differs from the method disclosed in Malfliet in that the work is performed without a structurally rigid carrier that has already been pre-finished. The molded body or carrier of the polyurethane skin is formed by the foam itself. Only after the mold is closed (without a structural carrier) is a plastic foam placed into the mold, which foam fills the intermediate space between upper tool part and the polyurethane skin situated in the lower tool part.

Another difference consists in the fact *that the (first) plastic layer is hardened before other processing steps take place*, as well as in the fact that the upper tool part must be provided with a particular heating system or temperature guidance, respectively, before a molded body is formed and produced, in order to be able to optimally harden and produce the molded body formed from reactive foam.

Proceeding from Malfliet et al., an inventive step was therefore necessary, even having knowledge of the remaining prior art, in order to arrive at the solution of the task according to the application.

The re-usability of an elastic skin (3) appears to be obvious to a person skilled in the art only when using an impermissible retrospective view. Here, the question must be asked whether a person skilled in the art would not only theoretically have had the possibility of re-using the skin, but would actually have done so.

Regarding claim 8, Malfliet does not contain partial hardening of the liquid plastic layer, but rather specifies more detailed information about the thickness and the configuration of the "flexible liner (6)," in other words the silicon layer that is laid in, and nothing with regard to the further method.

Regarding Staneluis et al. , the warming system that is described in Staneluis et al. (column 7, line 7-14) is one that is described purely schematically, without special embodiments. Also, the heated molds are configured merely as movable shells that are guided on a conveyor device (similar to an endless chain drive) to form a mold cavity on both sides of a laminate body

consisting of polymer skin and inner foam core.

Accordingly Applicant submits that claims 1, 3 and 7-13 are patentable over the cited references, taken either singly or in combination. Early allowance of the amended claims is respectfully requested.

Respectfully submitted,

ANDREAS GERKEN ET AL.



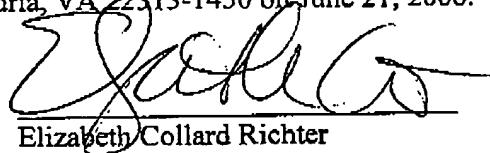
COLLARD & ROE, P.C.  
1077 Northern Boulevard  
Roslyn, New York 11576  
(516) 365-9802  
ECR:djp

Elizabeth C Richter, Reg. No. 35,103  
Frederick J. Dorchak, Reg.No.29,298  
William C. Collard, Reg.No. 38,411  
Attorneys for Applicants

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Elizabeth Collard Richter